TABLE 9-1

FIELD QC SAMPLES+

Sample Matrix/Type	Parameter	Field Duplicate	Rinsate	MS/MSD
Sediments	Volatiles	X	X	X
	Semivolatiles	X	X	X
	Pesticides/PCBs	X	X	X
	Herbicides	X	X	X
	PCDDs/PCDFs[1]	X	X	X[2]
	TEPH	X		X
	TOC	X		X
	Metals and Cyanide	X	X	X**
	Inorganics*	X	X	X
	Grain Size	X		
	Atterberg Limits	X		
	Radiochemistry	X		

X - Indicates that QC sample is to be collected.

* - Inorganics refers to parameters such as TSS (aqueous matrix) and others which may be analyzed for selected samples. Laboratory and field duplicates only will be required for TSS.

** - MS/MSD shall be a matrix spike and a laboratory duplicate for metals and cyanide as defined in Chapter One of SW-846.

+ - QC sample type defined within the text.

[1] Additional required QC samples include: one performance evaluation (PE) sample with 2,3,7,8-TCDD and the tetra- through octachloro dioxin and furan (PCDD/PCDF), one PE interference fortified blank and one field blank. Additional QC samples to be supplied by EPA - Region II. If unavailable from EPA, a Lab Control Sample containing 2,3,7,8-TCDD and the tetra-through octachloro dioxin and furan will be substituted for the PE sample, the laboratory method blank will be substituted for the field blank, and the PE interference fortified blank will not be required.

[2] Matrix spike only for PCDD/PCDF analyses.

TABLE 9-2

FREQUENCY OF COLLECTION OF FIELD QC SAMPLES

Type of QC Sample	Frequency
Rinsate Blank	each type of equipment per day that decontamination is performed (not to exceed one per day)
Matrix Spike/Matrix Spike Duplicate[1] or Matrix Spike[2]	1 per 20 field samples per matrix
Field Duplicate	1 per 20 field samples per matrix
PE Sample	1 per 24 field samples or less collected over a period of one week and analyzed by the same laboratory
PE Interference Fortified Blank[3]	1 per 24 field samples or less collected over a period of one week and analyzed by the same laboratory
PE Blank (i.e., Field Blank)	1 per 24 field samples or less collected over a period of one week and analyzed by the same laboratory

[1] MS/MSD for organics analyses, matrix spike only for PCDD/PCDF analyses.
[2] MS/duplicate for metals and cyanide analyses.
[3] If unavailable from EPA, this QC sample will not be required.

10.0
PERFORMANCE AND SYSTEM AUDITS

Performance and systems audits shall be conducted to determine whether:

- The QA program has been documented in accordance with specified requirements
- The documented program has been implemented
- Any nonconformances were identified and corrective action of identified deficiencies was implemented

This QA program operates independently of the overall project structure. External checks on project QA include independent peer review of work plans, reports, and calculations, and the audit procedures outlined in this section.

The Audit Flowchart (Figure 10-1) summarizes the audit procedures established in this section.

The Contractor QA/QC Officer will be responsible for initiating audits and monitoring the audit implementation. The Contractor QA/QC Officer or the Officer's designee, hereafter referred to as Auditor, will conduct field and office audits to coincide with appropriate activities in this project, as described in this section.

External system audits, which generally consist of a review of a laboratory's QA system and physical facilities for sampling, calibration, and measurement, may be performed by the EPA, Maxus or their representatives. Maxus may perform an external audit on any EPA laboratories or subcontractors performing analysis for this project.

10.1 PERFORMANCE AUDITS

The Contractor QA/QC Officer will evaluate the need for a performance audit with due consideration given to the recommendations of the CPM. Performance audits are used to quantitatively assess the accuracy of measurement data through the use of performance evaluation and blind check samples. The performance audit will be directed by the Contractor QA/QC Officer or designee. EPA may, at their discretion, submit "blind" performance evaluation samples to the analytical laboratory(ies) for analysis.

10.2 SYSTEMS AUDITS

A systems audit may be requested by the Contractor QA/QC Officer, if warranted, for project files and document tracking regarding those performing field work and report preparation. Systems audits may review the total data generation process, which includes on-site review of the field and laboratory operational systems, physical facilities for sample processing, sample collection and tracking, equipment calibrations, field and laboratory staff and procedures to generate acceptable data, and project files and document tracking.

The Contractor QA/QC Officer will schedule audits of field activities to evaluate the execution of sample identification, sample control, chain-of-custody procedures, field documentation, and sampling operations. Persons conducting the audits will be technical reviewers who are familiar with the technical and procedural requirements of field sampling.

10.3 AUDIT PROCEDURES

10.3.1 Scope and Sequence

The purpose of this section is to provide guidance to persons conducting project audits as part of the Passaic River Study. All information produced or obtained in the course of this investigation is subject to audit. All procedures shall be consistent with this plan and the approved sampling plan. The information must be reliable, gathered with appropriate attention to detail, and maintained with integrity. The documentation may take any of several forms including a field notebook, film, computer tape, a sample label, or an archived sample extract. This QAPP has adopted uniform sample control, chain-of-custody, and document control procedures modeled after EPA procedures. These procedures are designed to ensure that integrity of the data and related information is maintained.

The Contractor QA/QC Officer with agreement of the Project QA/QC Officer and Facility Coordinator will be responsible for identifying the entity or activity to be audited. The Contractor QA/QC Officer will then appoint the Auditor and the Audit Team Leader and brief them on the scope of the audit to be performed. The Audit Team will prepare an outline of the audit work to be conducted and will submit the outline to the Contractor QA/QC Officer for review/revision and approval.

10.3.2 Audit Notification

The CPM, and if appropriate, other audit entity (e.g., Field Task Leader, Laboratory Supervisor) will be notified by the Contractor QA/QC Officer of an audit at a reasonable time before the audit is performed. This notification will include information such as the general scope and schedule of the audit and the name of the audit team leader.

10.3.3 Field Activities Audits

The Contractor QA/QC Officer (or the Officer's designated representative) will schedule audits of field activities at various times to evaluate the execution of sample identification, sample control, chain-of-custody procedures, field documentation, and sampling operations. The evaluation will be based on compliance to the applicable sampling plan, SOP and work plan requirements. At a minimum, one audit of field activities involving Vibracore collection and core processing activities shall be conducted during implementation of the RIWP work. Additional audits may be conducted at the discretion of the Contractor QA/QC Officer.

The field audit is usually conducted by a reviewer who is familiar with the technical and procedural requirements of field sampling and with the applicable work plan requirements. The Auditor will maintain a record of the evaluation by preparing written documentation of the audit. Following the audit, preliminary results will be reviewed with the person in charge of the sampling. The Auditor will also prepare an audit report containing the results of the evaluation and recommendations for any corrective actions.

The following are individual areas which may be audited in any given Field Audit:

10.3.3.1 Sample Labels

The Auditor will examine a selected number of sample labels for completeness and accuracy. The Auditor will determine if the requisite information as specified in Section 4.4 is included on the label.

The Auditor will also determine if the sampling methods used were in accordance with the FSP and related SOPs.

10.3.3.2 Chain-of-Custody and Analytical Request Forms

The Auditor will select a number of the chain-of-custody and Analytical Request records at random to be audited in the field. The chain-of-custody records will be reviewed to determine if (1) the sample number, date, and time correspond to the sample label; (2) the parameters to be analyzed have been properly identified; and (3) all custody transfers have been documented and the date and time of transfer has been recorded. The Auditor will also evaluate if samples have been kept in custody at all times and have been properly and securely stored. The analytical request forms will be reviewed to determine if the sample number, date and time, and analyses requested, if pertinent, agree with the sample label and chain-of-custody forms.

10.3.3.3 Field Notebooks

Field notebooks will be reviewed during the field audit to determine if all entries are dated and signed. During field activities, notebooks will be either in the possession of individuals or kept in a locked file. The project number, site name, date of receipt, and name of the person receiving the book will usually be recorded on the notebook cover. All pertinent information will be recorded in these logbooks from the time each individual is assigned to the project until the project is completed. The Auditor will review field notebooks for their adherence to these procedures.

All in-situ measurements and field observations will be recorded in the notebooks with all pertinent information necessary to explain and reconstruct sampling operations. Each page will be dated and signed or initialed by all individuals making entries on that page. The field team on duty will be responsible for ensuring that notebooks are available during all monitoring activities and that they are safely stored at the end of each day's sampling activities and after the final day of field activities to maintain security. Any lost, damaged, or voided notebooks will be reported to the Contractor QA/QC Officer.

Notebook entries must be legible and recorded in ink, and contain accurate documentation of project activities. Because the notebook forms the basis for written reports, it should contain only facts and observation. Language should be factual, objective, and free of speculation and inappropriate terminology.

10.3.3.4 Sampling Operations

The Auditor will review sampling operations to determine if they are performed as stated in the work plan. The Auditor will evaluate whether the samples are in proper containers and are properly preserved. The Auditor also will evaluate whether the required field measurements and quality assurance checks have been performed and documented as directed.

10.3.3.5 Document Control

The document control audit will consist of checking each document for accountability. All documents used for field activities will be checked against the list of field documents required by the work plan. Written explanations will be provided for documents which are unaccounted for.

The documents will be examined to determine if required items such as signatures, dates, and project codes are included. The Auditor will examine controlled documents and will evaluate whether they have been handled and stored in the proper manner.

10.3.4 Laboratory Audit(s)

An on-site laboratory evaluation helps to evaluate whether all the necessary QC is being applied by the laboratory in order to deliver a high quality product. Laboratory audits may occur when project samples are in the laboratory sample stream, and shall also be performed in advance of utilizing any given laboratory. Laboratory audits conducted

within the past three years for any work being performed in association with the Diamond Alkali Superfund Site shall be considered to meet the requirement for auditing in advance of utilization.

Copies of relevant and current state certifications and performance evaluations for parameters of interest should be obtained from the laboratory and reviewed during the audit.

Laboratory audits shall include evaluation of whether the following criteria are met:

- The organization and personnel are qualified to perform assigned tasks.
- Adequate facilities and equipment are available.
- Complete documentation, including chain-of-custody of samples, and internal sample tracking measures are being implemented.
- Required analytical methodologies are being used.
- Adequate analytical QC, calibration including reference samples, control charts, and documented corrective action measures, are being provided.
- Acceptable data handling, documentation techniques and data review are being used.

10.3.5 Post-Audit Conference

At the conclusion of the audit, the Auditor shall hold a post-audit conference with the Field Task Leader or Laboratory Supervisor or designated representative to present audit findings and clarify misunderstandings. Audit findings shall be concisely stated by

the Auditor on the List of Findings for Post-Audit Conference (Figure 10-2). The findings will be acknowledged by the Laboratory Supervisor or designated representative by signing the List of Findings. Any corrective actions or responses required shall be conducted in accordance with the provision of Section 10.4.

10.3.6 Audit Report

An audit report will be prepared by the Auditor and signed by the Contractor QA/QC Officer. The report will include the following:

- Description of the audit scope
- Identification of the Audit Team
- Persons contacted during the pre-audit and post-audit activities
- A summary of audit results, including an evaluation statement regarding the effectiveness of the elements which were audited
- Details of each finding and program deficiency will be reported in an Audit Finding Report such as Figure 10-2. (Each finding and program deficiency shall be identified and described in sufficient detail to assure that corrective action can be effectively carried out by the project.)
- Recommendations for correcting deficiencies or improving the field or laboratory procedures

The audit report shall be addressed to the CPM with a copy to the Contractor QA/QC Officer and the Facility Coordinator. A copy of the audit report will be distributed to the EPA as part of the RI report.

10.4 RESPONSE

If non-conformances or items needing corrective action are identified by the Auditor, the audited entity and the Contractor QA/QC Officer will be notified of the need for corrective action. The CPM or designated representative of the audited entity shall respond to each Audit Finding Report by completing the Corrective Action Reply section of each report form. The response shall be completed within 20 days of receipt and shall clearly state the corrective action for each finding, including action to prevent recurrence and the date the corrective action will be completed. (Refer to Section 13.0 for corrective action procedures.)

10.5 FOLLOW-UP ACTION

Follow-up action shall be performed by the Audit Team to confirm the following:

- Evaluate the adequacy of the response
- Confirm that corrective action is identified and scheduled for each finding
- Confirm that corrective action is accomplished as scheduled

Follow-up action may be accomplished through written communications, re-audit, or other appropriate means and shall be documented by the Contractor QA/QC Officer or designee by signing the Corrective Action Verified section of each Audit Finding Report.

If the corrective action is found to be inadequate, the Auditor notifies the Project Manager and the audited entity of the inadequacies. The audited entity will then initiate further corrective action as specified in Section 10.4. The Audit Team will evaluate the corrective action as specified above in this section. If the corrective action is still found to be inadequate, the Contractor QA/QC Officer and the Project Manager will confer to resolve the corrective action.

When all corrective actions have been verified, a memo shall be sent to the CPM or other audited entity and the Contractor QA/QC Officer signifying the satisfactory close-out of the audit with copies to the other project staff as appropriate. The Contractor QA/QC Officer will then notify the Project QA/QC Officer, the Facility Coordinator, and the audited entity of the completion of the audit and the recommendations. The Project QA/QC Officer will review the audit report and corrective actions to evaluate the adequacy of the audit and recommend corrective actions and shall report conclusions to the Facility Coordinator and the Contractor QA/QC Officer.

10.6 AUDIT RECORDS

Original records generated for all audits shall be retained within the central project files. Records shall include audit reports, written replies, the record of completion of corrective actions, and documents associated with the conduct of audits which support audit findings and corrective actions as appropriate.

FIGURE 10-1
AUDIT FLOW CHART

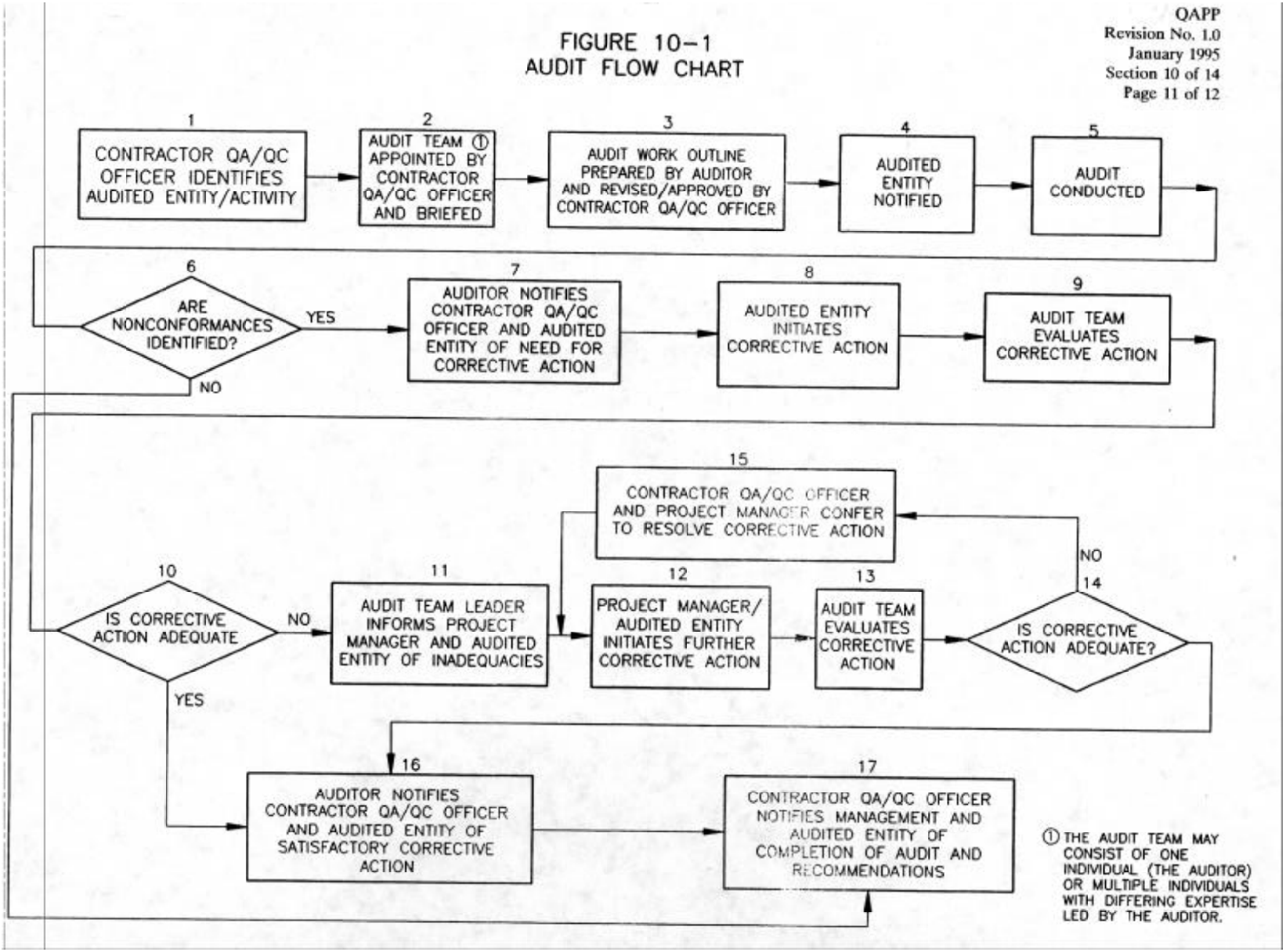

FIGURE 10-2
QUALITY ASSURANCE AUDIT FINDING REPORT

Project: ____
Audit No. ______________ Audit Date: _____________
Audit Finding No.: ___________________________________

Audited Organization: ____
Audited Area: ____
____
____
____

OBSERVATION/FINDING: ______________________________________
____
____

DESCRIPTION OF NONCONFORMANCE AND CAUSE: ______________
____
____

RECOMMENDATIONS: ____
____
____

CORRECTIVE ACTION REQUIRED? Yes ________ Prepared By ______________
No ________

W44444444444444444444444444444444444444444444444444444444444444444444444444444444444444444444
CORRECTIVE ACTION REPLY Response Date Due ____________________
____
____
____

Prepared By ___________________ Title _____________ Date ____________________
W44444444444444444444444444444444444444444444444444444444444444444444444444444444444444444444
CORRECTIVE ACTION VERIFIED

By _________________________________ Title _____________ Date ______________

11.0
PREVENTATIVE MAINTENANCE

Field and laboratory instrumentation will be examined and tested prior to being put into service and will be maintained according to the manufacturer's instructions. Sampling personnel will maintain a supply of typical maintenance replacement items available in the field to help prevent downtime because of equipment malfunctions. Examples of typical equipment maintenance items may include but not be limited to filters, tubings, fittings, sample containers, and calibration standards.

11.1 FIELD INSTRUMENTS

The following equipment or instruments, if utilized, will be serviced before the project is initiated and at regular intervals during the project as required by the manufacturer's instructions.

- pH Meter
- Salinity Meter and/or Specific Conductance Meter or Equivalent
- Thermometer
- Photoionization Detector or Flame Ionization Detector
- Suspended Sediment Sampler
- Bed Load Sampler
- Acoustic Doppler and Stream Profiler
- Fathometer
- Hydro I Unit or Equivalent

- Penetrometer
- GPS Unit

As additional equipment is required for the project, manufacturer's instructions will be followed.

11.2 LABORATORY INSTRUMENTS

All laboratory instruments will be maintained as specified in QA plans submitted by the approved laboratories (Section 7.0) as a minimum requirement.

12.0
SPECIFIC ROUTINE PROCEDURES USED TO ASSESS DATA ACCURACY, PRECISION, AND COMPLETENESS

The accuracy, precision, and completeness of analytical data will be routinely evaluated. The following provides for specific procedures and definitions of mathematical expressions to be used in this evaluation.

Precision of analytical results will be evaluated as the RPD of replicate analyses. Accuracy is reported as the percent recovery of a parameter from a sample of known value with a given analytical procedure (Section 3.2.2).

The procedures described below are designed to evaluate precision and accuracy for each analytical method. For reliable data to be produced, systematic checks must show that test results remain reproducible and that the methodology is accurately measuring the quantity of analyte in each sample within the limits specified in Section 8.0.

Data assessment and review will be accomplished by the Contractor QA/QC Officer and the Officer's designees. The Contractor QA/QC Officer or designee will review the analytical results for compliance with the established QC criteria as described in Sections 3.0 and 8.0. Problems associated with sample collection, packing, shipping, or analysis will be taken into consideration in evaluating the quality of the data.

Sections 12.1 and 12.2 list the procedures that will be used to evaluate data accuracy, precision, and completeness for the analyses conducted.

12.1 PROCEDURES FOR ASSESSING DATA ACCURACY AND PRECISION

12.1.1 Accuracy

Accuracy will be expressed as percent recovery %R for spiked samples (surrogate spikes, laboratory control samples) as follows:

$$\%R = \frac{M}{A}$$

where: M = Measured concentration in spiked sample
A = Actual spike concentration in sample

Laboratory acceptance limits for accuracy are stated in Section 3.3. The control limits for accuracy to be used in data validation are stated in Section 8.0.

In addition, the MS/MSD sample results will be used to calculate the %R in accordance with the following formula:

$$\%R = \frac{(T \& X)}{A} \times 100$$

where: T = total concentration found in spiked sample
X = original concentration in sample prior to spiking
A = actual spike concentration added to sample.

12.1.2 Precision

Precision will be expressed as RPD for collocated and homogenized duplicate environmental samples, MS/MSD analyses, laboratory duplicate analyses, and for laboratory duplicate control sample analyses, as follows:

$$\text{RPD (\%)} = \frac{|S\&D|}{(S\%D)/2} \times 100$$

where: S = first sample value (original)
D = second sample value (duplicate)

Laboratory acceptance limits for precision are stated in Section 3.3. The control limits for precision to be used in data validation are stated in Section 8.0.

12.1.3 Assessment of Data for Completeness and Useability

Following validation of the data packages in accordance with the provisions of Section 8.0, assessment of the data with respect to fulfillment of quality assurance objectives will be accomplished by the joint efforts of the Contractor QA/QC Officer and the CPM. This assessment will consider sample collection, sample handling, field data, blank values and field duplicate values, and additional data flags or qualifiers.

The overall analytical completeness will be calculated by the ratio of total valid analytical data results (including estimated values) to the total number of analytical results requested on samples submitted for analysis. The equation for the overall analytical completeness is

$$\% \text{ Analytical Completeness } = \frac{\text{Total Valid Analytical Data}}{\text{Analytical Data Obtained}} \times 100$$

The overall field completeness will be calculated by the ratio of the number of samples received in acceptable condition by the laboratories to the number of samples planned to be collected as specified in the FSP.

The equation for overall field completeness is

$$\% \text{ Field Completeness } = \frac{\text{Number of Samples Received by Laboratories}}{\text{Total Number of Samples Planned to Be Collected}} \times 100$$

Analytical and field completeness will be determined and compared to the goals stated in Section 3.2.4. If the goals are not met, the Contractor QA/QC Officer and the CPM will decide if the data are sufficient for site characterization and other data uses. If it is judged that the data are inadequate, additional field samples may be collected and analyzed to accomplish the study goals. Decisions to repeat sample collection and analysis may be made by the CPM consulting with the Contractor QA/QC Officer based on the extent of the deficiencies and their importance in the overall context of the study.

13.0
CORRECTIVE ACTION

A corrective action is a documented change in field or laboratory procedure which brings the practice into compliance with the QA objectives. Typically, a corrective action is required because stated QAPP or SOP procedures are not being followed. However, a corrective action can also include changes which will improve or modify procedures presented in this work plan if procedures are inadequate to provide guidance for unforeseen circumstances. The purpose for any corrective action is to assure that data of known quality are generated, and that procedures utilized are in accordance with this QAPP and the FSP.

13.1 FIELD CORRECTIVE ACTIONS

The need for corrective action may be identified as a result of field audits, by identification of problems by the field sampling team or sample receiving laboratory, or by other means (e.g., equipment malfunction). If problems become apparent that are identified as originating in the field, the CPM and Contractor QA/QC Officer should be notified and appropriate corrective action identified and implemented. The actions taken should be noted in the field book and described on a form similar to Figure 13-1 which is to be approved by the CPM and the Contractor QA/QC Officer. If corrective action does not solve the problem, appropriate personnel will be assigned to investigate and evaluate the cause of the problem. Once a corrective action is implemented, the effectiveness of the action will be verified.

13.2 LABORATORY CORRECTIVE ACTIONS

Corrective action resulting from QA audits or other sources identifying need for corrective action will be initiated by the laboratory QA/QC Officer in consultation with the Contractor QA/QC Officer or designee and will be documented on forms such as that in Figure 13-1 to be approved by the CPM and the Contractor QA/QC Officer. Corrective actions identified by the laboratory will be reported to the Contractor QA/QC officer, Facility Coordinator or the CPM for review prior to implementation. If the corrective action requires a modification to the QAPP or FSP, such proposed modification will be submitted to EPA for approval. Corrective action may include, but is not limited to the following:

- Reanalyzing the samples, if holding time criteria permit
- Correcting laboratory procedures
- Use of sample archive programs to enable sample reanalysis and validation
- Accepting data with an acknowledged level of uncertainty
- Resampling and analyzing
- Recalibration of instruments using freshly prepared calibration standards
- Replacement of solvent or other reagents that give unacceptable blank values

- Laboratory equipment repair or replacement (columns, temperature controllers, etc.)

- Additional training of laboratory personnel in correct implementation of sample preparation and analysis methods

Whenever corrective action is necessary to eliminate the cause of a non-conformance, as appropriate, the sample coordinator, analysis coordinator, data validator, or the CPM will ensure that all of these steps are followed:

- The problem will be defined.

- Responsibility for investigating the problem will be assigned.

- The cause of the problem will be investigated.

- A corrective action to eliminate the problem will be identified.

- Responsibility for implementing the corrective action will be assigned and accepted.

- The effectiveness of the corrective action will be evaluated.

- Any required substantive modification of the approved QAPP or FSP will be submitted in writing for approval of EPA.

- The fact that the corrective action has solved the problem will be verified.

13.3 IMMEDIATE CORRECTIVE ACTION

Any equipment and instrument malfunction will require corrective action. The field and laboratory quality control measures and QA Audits are working tools that identify appropriate corrective actions to be taken when non-conformance to plans or QC limits is encountered. They provide the framework for uniform actions as part of normal operating procedures. The actions taken should be recorded in field or laboratory logbooks. These on-the-spot corrective actions will be applied daily as necessary.

FIGURE 13-1
TYPICAL CORRECTIVE ACTION FORM

Date _____

Job Name _____

Location _____

Initiator's Name and Title _____

Problem Description _____

_____

_____

_____

_____

_____

_____

_____

Reported To _____

* *

Corrective Action _____

_____

_____

_____

_____

_____

Implemented By _____

Reviewed By _____

cc: Project Manager _____

Contractor QA/QC Officer _____

14.0
QUALITY ASSURANCE REPORTS TO MANAGEMENT

14.1 REMEDIAL INVESTIGATION REPORT QA/QC SUMMARY

The laboratory analytical program manager, laboratory QA coordinators, Contractor QA/QC Officer, and the data validation personnel will communicate as needed to evaluate whether QA/QC practices are being carried out and to review possible or potential problem areas. Data anomalies are to be investigated to assess whether they are a result of operator or instrument deviation, or if they are a true reflection of the site or task function.

Final RI reports will contain a discussion of QA/QC evaluations summarizing the quality of the data collected, as appropriate to the project. The objective of the project QA/QC summary will be to summarize whether the data are sufficient in quality and quantity to support the remedial investigation objectives. The QA/QC summary will include the following:

1) Tabulated results of the validated analytical data

2) A report from the QA/QC Officer evaluating the results of appropriate field and laboratory audits as described in Section 10.0

3) A tabulation of the data validation reports for each batch analysis from the data validation personnel evaluating the validity of the analytical data with respect to accuracy, precision, and completeness

4) A summary of significant QA problems and the corrective actions taken to rectify the situation

5) A report by the QA/QC Officer summarizing the validity of the analytical data with respect to accuracy, precision, completeness, representativeness and comparability

14.2 MONTHLY PROGRESS REPORTS

Monthly progress reports will be submitted to the EPA in accordance with paragraph 64 of the AOC. The reports will include a tabulation of the final, validated analytical data and an explanation of any significant sampling or QA/QC problems that would adversely affect data quality. Only valid data will be reported.

14.3 NON-CLP SUPERFUND ANALYTICAL SERVICES TRACKING DOCUMENT

In accordance with Paragraph 71 of the AOC, a "Non-CLP Superfund Analytical Services Tracking System Document" for each laboratory used in a given sampling event will be submitted to EPA. This shall include analytical work performed in a fixed laboratory in a permanent, off-site structure, in a mobile laboratory, or for on-site screening analyses. In accordance with a facsimile received by Maxus from Lance Richman for EPA on April 13, 1994, the EPA-required format is the Non-CLP Superfund Analytical Services Tracking Form reproduced in Figure 14-1. Upon completion, this form shall be submitted to:

RSCC Task Monitor
U.S. EPA-Edison Field Office
Environmental Services Division
2890 Woodbridge Avenue
Edison, NJ 08837.

This form will not be submitted until all data review/validation required under Section 8.0 of this QAPP has been completed.

The following are specifications and instructions for properly filling out this form:

A separate form should be completed for each sample group, which is defined as a group of samples that are associated with a unique site, field team, sampling period, and laboratory (if applicable). In accordance with Paragraph 71 of the AOC, a separate form needs to be submitted "for each laboratory utilized during a given sampling event." For example, all sediment core samples collected during the Sediment Characterization work under this AOC shall constitute one sample group as long as there has not been a demobilization of the field team with remobilization of a different field team at a later date. There may be multiple field crews that constitute a field team.

- The "Reference" blank in the upper right hand corner shall be filled in with sequential numbers of the format OCC-001, OCC-002, etc.

- The "Region" blank in the upper right hand corner shall be filled in with "II".

- The "CERCLIS No." blank in the upper right hand corner shall be filled in with "Not Applicable."

- The "Sampling Period" in the upper right hand corner shall correspond to the total time of sampling for a given sampling event as described above in this Section, not the collection dates for samples in a given Sample Delivery Group or Laboratory Data Package.

- The "Site name, city, state" in item 1 shall be filled in with "Passaic River Study Area, New Jersey."

- The "Type of activity" boxes in item 2 to be checked will be: 1) RI/FS and 2) PRP Oversight.

- The "Analytical facility/equipment used" boxes in item 3a shall be all that apply to a given form.

- The "Laboratory name" in item 3b shall be the name of the laboratory if a fixed laboratory, the name of the contracted laboratory if a mobile laboratory, or "80/120 Lister (contractor)" for an on-site laboratory where "contractor" will be replaced by the name of the contractor operating the on-site laboratory. The "Subcontractor laboratory" shall refer to the name of a second laboratory subcontracted by the primary laboratory to perform a specific subset of analyses.

- The "Funding lead" box to be checked in item 4a will be "PRP."

- The "Field contract" boxes and "Contractor Company" blank in item 4b are not applicable and will not be checked.

- The "Total number of samples analyzed" blank in item 5a shall be filled in with the number of samples including field QC samples (field duplicates, field rinsate blanks, trip blanks). For the purposes of this blank, a field sample split and analyzed for several types of analytes (e.g. VOAs, Metals) shall be counted as one sample.

- The "Specific Analysis Information" table in item 5b shall be filled in as follows:

  Column one, "Analysis Type" shall be filled in using the following abbreviations for analytical methods:

  - PCDD/PCDF (polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans)

- VOAs (volatile organic analytes)
- BNA (semivolatile organic analytes -base/neutral/acid extractables)
- Cyanide
- Pest/PCB (pesticides and aroclors)
- Herbs (herbicides)
- Metals (TAL metals)
- TEPH (total extractable petroleum hydrocarbons - diesel range)
- TOC (total organic carbon)
- ^{7}Be, ^{137}Cs, ^{210}Pb (radiochemical analyses)
- TDS (total dissolved solids)
- TSS (total suspended solids)

Column 2, "Facility Code" shall be the letter code taken from the box checked in item 3a.

Column 3, "Matrix" shall be filled in with SED for sediment and WATER for aqueous samples including field QC blanks.

Column 4, "# Samples" shall be the number of samples specified in item 5a above that were analyzed for each analysis type.